

DEPARTMENT OF ORNAMENTAL HORTICULTURE.

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THE BOTANY CLASS.

LESSON XIV.

We received, last week but too late to be described in our lesson, a package containing part of a vine with leaves and flowers, to be named. This is also a plant that is not a native and so not described in most of the botanies. But as it is a well known cultivated ornamental vine and belongs to a family of plants common throughout the country, we will do the same as before, trace it to the family and get the description from another source. The flowers in this case have no petals so we turn at once to Division III, Apetalous plants. Amentaceous trees or shrubs? (That is has flowers in an ament, like the pine or willow). No.

Flowers not in aments? Yes.

Calyx and corolla none? No.

Calyx herbaceous or corolla-like? Yes.

Ovaries more than one? No.

Ovary solitary? Yes.

Calyx adherent to the ovary? No.

Calyx free from the ovary? Yes.

Ovary one celled? Yes.

Ovules and seeds numerous? No.

Ovule and seed solitary. Leaves stipulate? No.

Ovule and seed solitary. Leaves without stipules? Yes.

Stamens more numerous than the calyx-lobes? No.

Stamens equalling in number or fewer than the calyx-lobes? Yes.

Flowers with scarious bracts? No.

Flowers without scarious bracts? Yes.

Calyx corolla-like, plaited? (In this case we have to pass this, although the calyx is somewhat corolla-like).

Calyx herbaceous. Styles 2. (Gray says: calyx greenish, sometimes colored or corolla-like).

Chenopodiaceae, or Goose-foot family. The general description of the family as given in Chapman's Southern flora, does not fit this vine, so we will give that of Gray's School Botany: Represented chiefly by homely herbs; the one-celled ovary has a single ovule and ripens into an akene or utricle, containing a single seed. Leaves chiefly alternate. Plants neither attractive nor easy to students; only the cultivated plants and common weeds here given.

1. Cultivated for ornament, twining plant, with white flowers: Calyx corolla-like? Yes.

A. Boussingaultia. Flowers in slender spikes from the axils of the leaves, perfect. Calyx 5-parted, spreading, and with one or two exterior sepals or bracts. Stamens 6, with slender filaments. Style slender, stigmas 3, club-shaped.

B. Baselloides, of South America: High twining plant, in cultivation herbaceous, from oblong tubers resembling small potatoes: smooth, with somewhat heart-shaped succulent leaves, and slender racemes of deliciously fragrant small flowers in autumn. Perennial.

This vine is quite common in cultivation at the North. It is usually called Maderia vine but sometimes Mexican vine. The tops will stand

some frost, but not a freeze. The tubers are entirely hardy in the ground in this state.

Do these descriptions of flowers seem prosy to you? We might easily give the name without all this dry analysis, but it would not be any help towards gaining an ability to study out the names of unknown plants for yourselves. The method which we have used is that given in all botanies for the analysis of a new flower. Of course, old experienced botanists soon become so familiar with the different families that they do not have to go through all the formula as we did, they will, perhaps, recognize the plant as belonging to some well known genera and turn at once to that to find what species it is. They might follow some such plan as we did last week with the second plant, which belonged to the same family as the first so we could save much time. We would like to make these lessons more interesting, but to be of any value they must be practical. The further progress with these lessons depends entirely upon our readers, if they send plants to be named we will go on, if not, they will be dropped.

Fertilization of Flowers.

This article does not treat of methods of enriching the soil for flowers, but of the fertilization of the pistils to ensure the production of seed. A correspondent of an English paper, the Horticultural Advertiser, narrates some personal experience.

It is a curious fact that though single petunias are grown in unlimited quantities, seed of the best strains are usually scarce, and I have proved that when it is saved in the ordinary way—that is, from those which seed without artificial aid—there will be a great deterioration in the progeny; with care, however, the best strain will seed well, but it must be done by artificial fertilization, or, rather, by human aid. There is no difficulty in transferring the pollen from the anthers to the pistil by the aid of a soft camel's hair brush (or pencil, as it is usually termed), yet a little judgment should be exercised; indiscriminate crossing of different colors will be fatal. Starting with whites, if it is desired to keep to pure whites, the best formed flowers should be impregnated from another of equal quality, or at least of the most pure shade, and working up if each separate shade can be had in flowers of good quality on plants of good habits. Interbreeding should be avoided as far as possible; yet it may be an advantage to take pollen from a good bright color and apply it to a white of good form. I have found in crossing it requires some discrimination, and it is only observation and actual practice that will secure the best results; and it is a curious fact that all the "rogues" or those of inferior quality seed freely, without aid; this accounts for so many of inferior quality from seed that has not been carefully selected. The work of fertilizing by the aid of a brush takes up but little time, but it must be attended to at the right time, and a few selected plants carefully fertilized will give more seed than a large batch that is left to fertilize by natural agencies.

In gloxinias we have similar results. I have had more seed from about a dozen plants which I have fertilized by the aid of a brush than from hundreds of plants which have been left to natural agencies. In almost all gloxinias the pollen will be found to be abundant, yet somehow or other it seems to fall short of the pistil, or it may be that the pollen taken from another flower is more efficacious. At any rate, gloxinia seed saved from a

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Leaves not cordate; carpels 7-12? Yes.

choice strain makes a fair price. I am not quite sure what the ordinary price would be in the trade, but going back to the petunias, I have known seed sell at £12 per ounce, but for a fairly good strain from 50 shillings to £5 is about the usual price. This reminds me, too, that petunia seed may be kept for a long period. I have had seed four years old which has germinated as freely as that saved the previous autumn, but it had been kept in a close tin box in a cool place; yet gloxinia seed kept under the same conditions failed after the first year. It is possible, however, if the gloxinia seed had been kept in a warmer position it would have survived and retained its vitality for a longer period. I may mention that gloxinia corms which have been kept in a cold place, even if not touched by frosts, appear quite sound when put into warmth to start them, will fail to start, though the corms may appear quite plump and sound, while those which have been stored in a warm dry place and are shrivelled will start when given a little moisture and other genial conditions.

COCOS.

The Most Beautiful and Graceful Palms of Our Florida Gardens.

By Dr. H. Nehrling.
Editor Floral Department:

I have invariably noticed that these Cocos species form their characteristic leaves in their third or fourth year and that they always make very graceful pot plants, particularly desirable for room decoration as they can stand more rough treatment than any other palm with which I am acquainted. They begin to flower and bear fruit in their fifth or sixth year here in my garden.

Cocos datil.—This is the largest and most massive of all, forming a thick, heavy trunk and pushing up numerous upright leaves 8 to 10 feet long. The flower clusters are immense and the spathes, in which they are contained, are of the form of a baseball bat but much larger. The flowers are yellowish and lilac. This palm is the largest of my collection, though several years younger than my largest specimens of Phoenix canariensis and Ph. sylvestris. The fruit clusters often weighed 1,025 fruits in one cluster. The from 35 to 50 pounds and I have counted fruits are of the form and size of a large plum, yellow-orange in color, very juicy, of an excellent taste and strongly and deliciously fragrant. Often the fruits have a brownish-red hue. When fully ripe they are covered with